

## REMARKS

This amendment is submitted in response to the Official Action mailed September 21, 2005. Claims 1-3 and 12-13 are currently pending. Claims 4-11 and 14 are withdrawn. Applicants appreciate the Examiner's indication that claims 3 and 13 are directed to allowable subject matter. Claim 1 has been amended to more particularly point out and distinctly claim the invention. In view of the above claim amendments and the following remarks, reconsideration by the Examiner and allowance of the application are respectfully requested.

With respect to the request for legible copies of each non-patent literature publication listed in connection with the Information Disclosure Statement filed March 25, 2004, enclosed are copies of publications AA through AE.

With respect to claims 2 and 12, copies of the relevant pages from "Mechanisms of Inorganic Reactions," by Fred Basolo and Ralph Pearson; and "Inorganic Chemistry," by James E. Huheey, which are cited at page 6, lines 6-11 for their descriptions of the Pearson acid and base terms, are enclosed. Also enclosed is a copy of the seminal 1967 article by R. Pearson and J. Songstad entitled, "Application of the Principle of Hard and Soft Acids and Bases to Organic Chemistry," which explains the concept of hard and soft acids and bases.

Claim 1 has been amended to define each repeating structural unit as comprising "a transition metal center consisting of one or more transition metal atoms, wherein each transition metal center is coordinated to one binding site of an exodentate bridging ligand and at least one binding member of a bidentate binding site on each of two polyfunctional ligands," which is disclosed at, for example, page 7, lines 15-16 and in the formula definition at page 12, lines 9-13 of the originally-filed application.

Claim 1 has also been amended to further define the exodentate ligand as "an aromatic ligand having two monodentate binding sites that are substitutionally labile when contacted with an excess of water", which is supported at, for example, page 19, line 8 to page 20, line

10 of the originally-filed application. Aromatic exodentate ligands are known to those skilled in the art to have “strong” or “good” potential for “pi-backbonding.” Claim 1 has also been amended to further define that the ligand having a single, monodentate coordination site, “in combination with said substitutional lability, permits interconversion between said three-dimensional compound structure and lower dimensional starting materials”. Support for this amendment is provided at, for example, page 20, line 19 to page 21, line 4. No new matter has been introduced by these amendments.

Claims 1, 2, and 12 were rejected under 35 U.S.C. §102(b) as anticipated by Seki et al., “Microporous Coordination Polymers with Open Frameworks,” J. Phys. Chem. B, vol. 106, pp. 1380-85 (2002). Seki et al. is cited for allegedly disclosing “the preparation of several 3-dimensional coordination polymers derived from copper complexes, one of several dicarboxylic acids, and triethylenediamine where the latter is a pillar ligand joining sheets formed by the metal complex and the dicarboxylic acids.” Office Action, pg. 3. This rejection is respectfully traversed in view of the above claim amendments for the following reasons.

In contrast to the present invention, the exodentate ligand (triethylenediamine (“TED”)) disclosed in Seki et al. is not aromatic and is, therefore, not substitutionally labile, to permit interconversion between the three dimensional compound structure and the lower dimensional starting materials. Claim 1 has been amended to emphasize this distinction. Claim 1, and Claims 2 and 12 depending therefrom, are thus not anticipated by Seki et al. under 35 U.S.C. §102(b)

Furthermore, there is no teaching or suggestion in Seki et al. that replacing the TED exodentate ligand with an aromatic exodentate ligand will produce a substitutionally labile compound structure that can be interconverted between the three dimensional structure and lower dimensional starting materials. Claims 1, 2 and 12 are therefore also not obvious in view of Seki et al. under 35 U.S.C. §103(a).

This rejection in view of Seki et al. has thus been overcome. Reconsideration by the Examiner and withdrawal of the rejection is therefore respectfully requested.

Next, Claims 1 and 2 were rejected under 35 U.S.C. §102(b) as anticipated by Tao et al., “Blue Photoluminescent Zinc Coordination Polymers with Supertetranuclear Cores,” Chem. Comm., vol. 20, pp. 2043-44 (2000). Tao et al. is cited for allegedly disclosing “the preparation of a zinc-based coordination polymer derived from zinc oxo clusters, isophthalic acid or fumaric acid, and 4,4’ bipyridine. Complex 2 has a 3-dimensional framework where bipy is a pillar ligand between sheets derived from the clusters and the dicarboxylic acid.” Office Action, page 4. This rejection is respectfully traversed in view of the above claim amendments for the reasons set forth hereinafter.

Claim 1 has been amended to emphasize that the transition metal centers of the compound structures contain only transition metal atoms. This excludes the zinc oxo transition metal centers of Tao et al. noted by the Examiner. The zinc oxo based structures disclosed in Tao et al. are non-porous. The zinc oxo structures also form bonds that are not labile and cannot be readily dimensionally inter-converted with water.

Because Claim 1 has been amended to exclude compounds with zinc oxo ( $Zn_4O$  and  $Zn_4(OH)_2$ ) transition metal centers, Claim 1, and Claim 2 depending therefrom, is no longer anticipated by Tao et al. By amending Claim 1 in this manner, the rejection of Claims 1 and 2 under 35 U.S.C. §102(b) as being anticipated by Tao et al. has thus been overcome.

Furthermore there is no teaching or suggestion in Tao et al. that replacing the zinc oxo centers with centers containing only transition metal atoms will produce a compound structure that is porous and dimensionally inter-convertible. Therefore Claims 1 and 2 are also not obvious in view of Tao et al. 35 U.S.C. §103(a).

This rejection in view of Tao et al. has thus been overcome. Reconsideration by the Examiner and withdrawal of the rejection are therefore respectfully requested.

Applicants: Li et al.  
Application No. : 10/718,047  
Page 11

Docket No. P25,711-A USA

In view of the foregoing the claims in this application are in condition for allowance. Reconsideration by the Examiner and a favorable action on the merits is respectfully requested. A three-month Petition for Extension of Time to respond to the Office Action is also enclosed with a credit card authorization form for the required fee of \$510.00 (small entity). If there are any additional charges in connection with this response, the Examiner is authorized to charge Applicant's Deposit Account No. 19-5425 therefore.

Date March 21, 2006

Respectfully submitted,

A handwritten signature in cursive script, reading "Sarah Klosek". The signature is written in dark ink and is positioned above the printed name and registration number.

Sarah Klosek, Esq.  
Registration No. 55,332

Synnestvedt & Lechner LLP  
2600 Aramark Tower  
1101 Market Street  
Philadelphia, PA 19107  
Telephone: 215-923-4466  
Facsimile: 215-923-2189